A Home-based Exercise Intervention for Non–Small Cell Lung Cancer Patients Post-Thoracotomy

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Objectives: *There are no evidenced-based rehabilitative guidelines for post-surgical non–small cell lung cancer (NSCLC) patients. This qualitative study provides evidence on the acceptability of an effective postsurgical exercise intervention targeting the self-management of cancer-related fatigue to fill this gap.*

Data Sources: *Qualitative perspective of 37 individuals randomized to a 6-week exercise program following hospital discharge post-thoracotomy for NSCLC.*

Conclusion: *Postsurgical NSCLC participants found this rehabilitative exercise intervention highly acceptable because it removed traditional barriers to exercise.*

Implication for Nursing Practice: *A highly acceptable and effective solution for meeting the unmet rehabilitative support needs of NSCLC patients has broader implications for extension to other vulnerable, aging, deconditioned populations.*

Key Words: *cancer-related fatigue, exercise, lung cancer, surgery, symptoms, qualitative research, rehabilitation.*

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Research reports that individuals with lung cancer have significant unmet supportive care needs, including physical deconditioning, difficulty completing activities of daily living, challenges finding adequate support to exercise, and trouble managing fatigue, as well as other symptoms.[1-5] In particular, fatigue remains a prevalent and debilitating symptom; IT IS especially common in individuals with lung cancer.[6-8] While surgical intervention provides the best treatment for individuals with early stage non–small cell lung cancer (NSCLC), longitudinal studies of postsurgical NSCLC patients describe severe and/or worsening cancer-related fatigue (CRF), declines in functional status and quality of life (QOL), and the persistence of burdensome co-existing symptoms.[9-12]

Emerging evidence demonstrates that exercise is an effective means to treat CRF.[13-15] Despite knowing that significant morbidity and unmet supportive care needs exist for postsurgical NSCLC patients, a lack of translation of this important knowledge to practice persists, creating a significant gap in care for this vulnerable population.[16,17] Our team previously reported results focusing on the feasibility and preliminary efficacy of a two-arm randomized controlled trial exploring early rehabilitation.[17] In this study, we examined the impact of a 6-week rehabilitative CRF self-management exercise intervention in NSCLC patients transitioning from postsurgical hospital discharge to home. Also, in this study, we found preliminary efficacy of the 6-week exercise program in reducing CRF as compared with a usual care group.[17] In fact, mean CRF severity levels recovered from postsurgery and restored to levels lower than pre-surgery, while the usual care group's postsurgery CRF severity showed no improvement over time.[17] Further, the National Cancer Institute recommends high-priority research to design effective interventions to improve CRF and increase acceptability and successful implementation, as well as strategies to increase uptake of interventions such as exercise to promote the management of CRF.[18]

The objective of this article is to provide further details regarding the acceptability of a postsurgical exercise intervention targeting CRF self-management to inform surgical oncology practice and research to fill the gap in postsurgical rehabilitation of the NSCLC population during the transition from hospital to home. The report of acceptability data is critical[18] because the exercise intervention has demonstrated preliminary efficacy with broader implications for vulnerable, aging, deconditioned populations such as the postsurgical NSCLC population as this intervention may be used to guide rehabilitation platforms for these populations.

Background of the Problem

Exercise Intervention Studies for Postsurgical NSCLC Recovery are Nearly Non-Existent

Exercise intervention research for complex surgical oncology populations such as postsurgical NSCLC patients has been extremely limited.[19] Despite the stark international incidence of NSCLC, there are no guidelines for routine rehabilitative support for individuals with NSCLC after surgery.[9,20] Thus, the optimal exercise program for individuals with NSCLC recovering from surgery is not known.[21,22] Cochrane reviews of the general cancer population indicate that exercise can also be beneficial for the management of CRF and health-related QOL. This benefit was found to be effective from cancer diagnosis, through active treatment, and post-treatment, with treatment including surgery.[14,23,24] However, the reviews encouraged caution given the interpretation of these positive results because the majority of the studies were conducted on the breast cancer population, who are typically less vulnerable, younger, and have fewer co-morbid conditions. To date, the eligibility criteria for exercise interventions in postsurgical NSCLC patients have excluded much of the NSCLC postsurgical population.[25,26] These exercise interventions have built-in barriers to participation in exercise, such as eliminating patients with common co-morbid conditions, requiring moderate-to-vigorous exercise, being rigid or complex in design, inpatient or facility-based, using conventional exercise equipment, and having not reported adherence rates while exhibiting poor rates of retention.[27-29] Studies also have not addressed the critical postsurgical hospital-to-home transition, leaving patients without a plan for surgical rehabilitative recovery particularly to address severe symptoms such as CRF.[9] Moreover, the latest Cochrane reviews on exercise interventions on health-related QOL, including fatigue during and after active cancer treatment, recommend research investigating how to sustain positive effects of exercise over time.[23,24] In particular, focus is needed to investigate the attributes that lead to the adherence and success of beneficial effects of rehabilitative exercise.[14]